

# Office Memorandum • UNITED STATES GOVERNMENT

TO : The Files - Contract RD-138, Task Order 11

DATE: 29 April 1960

FROM : 

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SUBJECT: Conference Report - Production Engineering Study of HG-3

1. On 21 April 1960 a conference was held in Alcott Hall to discuss changes on the HG-3 production model. Present for discussions were:

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2. (Under this task  is making a production engineering study in order to lower the price in the production of the HG-3. The following is a summary of the proposed changes on the HG-3.

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- a. Top and bottom covers to be molded from "Kralastic" in lusterless finish - Fed. Spec. Table IX - No. 37088.
- b. Crank handle to be molded from "Kralastic." Handle shaft has been redesigned, eliminating the rather expensive "Oilite" bushings.
- c. The main shaft and crank details have been changed from a socket to a keyhole type, reducing the cost of this assembly considerably.
- d. All mounting and fastening will be made by means of the mounting plate and, (as such), the mounting rings on the bottom cover have been eliminated.
- e. Bottom cover will have three studs mounted on the back, using keyhold design in mounting plate. Mounting plate to be molded from "Diall" FS-4. (This eliminates (over) ten parts made from Grade 310 stainless steel. This design also includes a locking lever so that the generator will not unlatch while being cranked. The back plate will also have additional wood screw holes in the center for mounting to a tree of small diameter, and two 1½ inch slots at the mid-position sides for belt mounting.

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- f. First, second, and third gears to be molded from "Delrin." Second and third gears to have pinions molded to gear as one integral assembly.
- g. Both end bells to be made from "Diall" FS-4. Design of the large end bell has been simplified, reducing the complexity of the mold.
- h. The lamp configuration has been completely redesigned and will now be molded from a plastic material, probably nylon or "Delrin." The lamps will be mounted on the printed circuit board simplifying the wiring. The ammeter will be eliminated and replaced by a transistor driven lamp.
- i. All electrical components will be mounted on one printed circuit board, using both sides. This board will be mounted using the two terminal posts and one other mounting stud as support. The coils will have a mechanical connection to the board. By removing the two coil leads and the two screws on the terminal posts, and one auxiliary mounting screw, the entire electrical package can be removed from the generator for servicing. No inter-connecting harnesses will be necessary.
- j. The electrical components have been changed to incorporate a less expensive relay, a choke with more turns and a smaller diameter wire, less expensive transistors, a full-wave bridge using single silicon diodes and two small tantalum capacitors in the filter. All semi-conductor parts will be clip-mounted rather than suspended from their leads.

3.  stated that with the changes listed in paragraph 2 the unit price of the HG-3 will be approximately \$350.00 in a quantity of 200. (This task) will terminate 18 May 1960 at which time drawings for tooling and two models of the HG-3 will be delivered. These models will incorporate the changes listed in paragraph 2.

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